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ABSTRACT

This annotated bibliography of research in agricultural education includes 43 studies completed in 1969-70 in the states of the American Vocational Association North Atlantic Region. A list of 43 studies in progress is also included. All completed studies are available for loan from university libraries, departments of agricultural education in universities, or state departments of vocational and technical education. The abstracts are organized according to each study's purpose, method, and findings. (BG)

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Summaries of Studies

in

AGRICULTURAL EDUCATION

NORTH ATLANTIC REGION

1969-70

STATUS REPORT

STUDIES IN PROGRESS

ABSTRACTS

THE CENTER FOR OCCUPATIONAL EDUCATION
School of Education
University of Massachusetts
Amherst, Massachusetts 01002

November, 1970

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Summaries of Studies in Agricultural Education

North Atlantic Region

1969-70

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November, 1970

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STATUS REPORT

This compilation of research activity during 1969-70 in the North Atlantic Region includes 43 abstracts of completed studies and a list of 43 studies that are in progress at the present time. All completed studies are available for loan from university libraries, departments of agricultural education in universities, or state departments of vocational and technical education. Both the completed studies and the studies in progress are analyzed by state and type of study.

It would appear from an analysis of Table I that the main objective of research activity in the North Atlantic Region is to provide a learning activity for graduate students. Thirty-two of the 43 studies involved the papers, field practicum reports, or theses of master's degree candidates and 6 studies were doctoral dissertations. Five studies were conducted by staff. The data indicates an increase in staff studies and master's degree studies and a decrease in doctoral studies from the previous year when 24 master's degree studies, 15 doctoral studies, and 3 staff studies were reported.

TABLE I

Studies Completed in North Atlantic Region by State and Type of Study

State	Type of Study: Staff	Doctoral	Masters	Total
Maryland	0	0	1	1
New Hampshire	2	0	0	2
New Jersey	0	0	2	2
New York	1	2	0	3
Pennsylvania	2	4	8	14
Rhode Island	0	0	10	10
West Virginia	0	0	10	10
	5	6	32	43

A comparison of Table II with Table I and the data in the publication for the previous year indicates there may be a trend toward increasing research activity. Five states are involved in staff studies compared with three states completing studies this year and two states completing studies last year. Three states have doctoral studies in progress compared with two states having doctoral studies completed both this year and last year. The number of master's degree studies in progress is similar to the 24 completed in 1968-69, but less than the 32 completed this year. Since master's degree studies are short-range projects, the number completed may exceed the number planned.

TABLE II

Studies in Progress in North Atlantic Region by State and Type of Study

State	Type of Study: Staff	Doctoral	Masters	Total
Maryland	0	2	2	4
New Hampshire	1	0	0	1
New Jersey	0	0	2	2
New York	1	0	2	3
Pennsylvania	4	6	4	14
Rhode Island	2	0	2	4
Vermont	3	0	0	3
West Virginia	0	2	10	12
	11	10	22	43

The summary reflects studies that have been reported by personnel in agricultural education. It provides a guide to research findings and trends in the North Atlantic Region.

ANNIS, WILLIAM H. An Investigation to Determine the Availability and Adaptability of Multimedia Material in the Plant Sciences for Use in New Hampshire. Staff Study 1969, University of New Hampshire. Agricultural Education Program, University of New Hampshire, Durham.

Purpose--(1) To determine what multimedia material in the plant science area is available from vocational education materials centers and commercial concerns. (2) To adopt those multimedia materials which apply to New Hampshire conditions. (3) To adapt where possible those multimedia materials. (4) To develop multimedia material that is needed and unavailable from vocational education materials centers and/or commercial firms. (5) To develop programmed instruction on audio tape for use with multimedia materials in the plant science area.

Method--Seven states responded with multimedia materials in plant science. Much of the material was adaptable to New Hampshire conditions. The materials were reviewed, revised and scripts rewritten to meet North East conditions. Self administered tests were developed and scripts taped for individual use.

Findings--Three sets of each of 19 series were duplicated and are available for loan to vocational agriculture departments. These are as follows: (1) Beginning Techniques in Flower Design. (2) Building Quality Lawns for Beauty. (3) Designing with Flowers and Decorative Materials. (4) Field Diagnosis and Tissue Testing. (5) Fundamentals of Plant Identification. (6) Greenhouse Construction. (7) Greenhouse Uses, Shapes and Related Structures. (8) Identifying Annual Garden Flowers. (9) Identifying Coniferous Trees. (10) Landscaping Design - Part I. (11) Landscaping Site Analysis - Part II. (12) Landscaping the Public Area - Part III. (13) Landscaping the Private Area - Part IV. (14) Lawn Care and Management. (15) Propagation by Air Layering. (16) Pruning Ornamental Shrubs. (17) Steam Sterilization. (18) Trees, Shrubs, Ground Covers and Vines. (19) What is Horticulture?

ANNIS, WILLIAM H. and RICHARD G. FLOYD, JR. An Interstate Investigation of Employment Opportunities and Educational Requirements for Jobs in Outdoor Recreation and Conservation Enterprises. Staff Study, 1969, University of New Hampshire. 82 p. Agricultural Education Program, University of New Hampshire, Durham.

Purpose--(1) To develop an instrument which would ascertain the educational needs of people who wish entry-level employment in the organized outdoor recreation complex and the enterprises deemed supportive to this complex. (2) To determine entry-level employment opportunities in the outdoor recreation complex with its supportive enterprises.

Method--This developmental phase of the study involved the collection and analysis of data from 59 employers in nine types of outdoor recreation enterprises and 50 employers in six groupings of supportive enterprises. The area studied was the economic area of upper Carroll and lower Coos Counties, and the Seacoast area of Rockingham County in New Hampshire. All organized recreation enterprises within the area were studied. The study was designed to obtain answers to a number of questions relative to employment and educational needs within the recreation complex. The data were collected by the interview technique.

Findings--Summer operations are varied, more numerous and tend to be smaller than winter operations. All outdoor recreation enterprises hired full-time, part-time and seasonal employees in varying numbers. The resort hotels hired the largest number of employees with winter ski areas hiring the second largest number of employees. The total number of employees studied in outdoor recreation was 1653. The recreation supportive enterprises hired a total of 953 employees in the full-time, part-time, and seasonal categories. Stores and eating and sleeping accommodations represented the two categories with the largest number of employees. Most employers relied upon personal application or word of mouth to secure their employees in both the winter and summer seasons. Employment security was used very little as a source of obtaining employees. With the exception of beaches and marinas, all of the outdoor recreation enterprises expected to expand their facilities or services for their patrons. Expected expansion within the recreation supportive enterprises was much less than in the outdoor recreation enterprises. Sixty-three job titles were found within the outdoor recreation complex and supportive enterprises. Food, lodging, maintenance, sales, and management were found in the greatest frequency. Salary for entry level employees within the job titles ranged from $.64 to $3.50 per hour. Few people with formal education specifically for the job title within which they were working were found in the study area. Only 30 per cent of the employees in outdoor recreation had prior work experience in their job titles. There were slightly more than 20 per cent of the employees in the supportive enterprises who had prior work experience in their job titles. Personality traits displayed by employees were of concern to the employers. Courtesy, appearance and pride in work rated the highest concern among the employers. Fifty schools in New England and New York offered courses in the Agricultural Occupations area of forestry, conservation, and recreation. These courses are predominately on the secondary level with very few on the post-secondary level. Only one course was reported for the handicapped. There were no courses reported for adults or the disadvantaged. Employers in the recreation and supportive enterprises suggested a total of 13 different subject matter areas which would be of help to their employees if courses could be offered. Mechanics, culinary arts and management accounted for most of their suggestions.

BOWER, RONALD D. Continuing Education for Adults Employed in Off-Farm Agricultural Occupations in the Chambersburg Area School District. Paper, M.Ed., 1970, The Pennsylvania State University. 37 p. Library, The Pennsylvania State University, University Park.

Purpose--(1) To determine if the managers of agri-businesses in the Chambersburg School District felt that they or their employees could benefit from adult education courses in agriculture, (2) to determine what agricultural subject matter areas are most needed, (3) to determine what length of class, time of meeting and place of class meeting would be most satisfactory, and (4) to determine if the program would be training persons for entry level job titles or for advanced job titles.

Method--A two-part interview schedule was developed. Part I pertained to class organization and determining the need for classes. Part II contained a list of 94 competences in Agri-business Management, Plant Science, Soil Science, Agricultural Mechanics and Animal Science. The managers rated the importance of these competences on a five-point scale.

The interview schedule was mailed to the managers of all agri-businesses in the Chambersburg Area School District employing more than three persons. This was followed by a phone call and a personal visit to the business to complete the schedule.

Findings--Results of the study indicated that there was a need for this type of program. Most managers felt that the course should be organized on a one night a week basis, be 20-40 class hours in length and be held in the local high school.

The several types of businesses placed emphasis on different areas of instruction. Agricultural supply businesses and greenhouses placed emphasis on plant and soil science; feed dealers emphasized animal science; and farm machinery dealers emphasized agricultural mechanics.

Two areas of instruction were rated high by all businesses interviewed. These were agri-business management and agricultural mechanics.

BROWN, KENNETH EARL. Determining the Relationship of Face to Face Conference and the Vocational Agriculture Interest Inventory Test in Recruiting Ninth Grade Vo-Ag Students. Problem, M.S., 1970, West Virginia University. 50 p. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was: (1) to determine the farming status of the fathers of every eighth-grade boy in the Oswayo Valley Junior High School and the Coudersport Junior High School, (2) to determine the occupational plans of the eighth grade boys in the two schools, (3) to determine the farming experience of every eighth grade boy, (4) to determine the post-high school educational plans of the eighth grade boys and (5) to determine the number and average interest score of the students electing Vo-Ag in the Oswayo Valley Junior High School and the Coudersport Junior High School.

Method--Data for this study were obtained by the use of the Vocational Agriculture Interest Inventory Test, a student survey form and conferences with boys in the Coudersport Junior High School. Analysis was made by the chi square statistical method.

Findings--This study indicated a marked difference between Oswayo Valley Junior High School where no personal contact was used and in the Coudersport Junior High School where personal contact and counseling were used.

Eleven students in the Oswayo Valley Junior High School plan to enter Vo-Ag and these students had an average interest score of forty-nine. Twenty-three students in the Coudersport Junior High School plan to enter Vo-Ag and these students had an average interest score of sixty-seven.

This study also indicated that a large number of students in the Oswayo Valley High School who did not plan to enter Vo-Ag had full-time farming experience and planned to enter an agricultural occupation.

On making the final analysis of this study it seems to be that the personal contact used in the Coudersport Junior High School was more important than the Vocational Agriculture Interest Inventory Test in recruiting ninth-grade Vo-Ag students.

BURGETT, DONALD C. The Development of a Procedural Model for Making Effectiveness/Cost Evaluations of Occupational Education. Thesis, Ph.D., 1970, Cornell University. 267 pp. Library, Cornell University, Ithaca, New York.

Purpose--The major purpose of this study was to develop a procedural model for use in making effectiveness/cost evaluations of programs of occupational education. In addition, the purpose was to apply the model to a program of occupational education to try out the procedures contained in the model.

Method--The model and procedures for applying it were developed after an extensive review of the literature was conducted with particular emphasis on areas of controversy in evaluation. Application of the model to a case study program of occupational education resulted in effectiveness measures for the objectives of the program. These were administered by questionnaires to the 1969 graduates and their employers. A control group was selected randomly from graduates of local schools served by the occupational school who had followed a general education curriculum.

Data were presented in the form of a frequency distribution and a weighted mean was computed. Through use of suitable formulas, the weighted mean was expanded and plotted on a ten-point scale. The difference between the weighted mean of the two groups was tested for significance.

Findings--Based on observations made during development and application of the model, the following conclusions were drawn:

1. The model provides adequate direction for creation of an effectiveness/cost evaluation instrument.

2. The model is feasible for use in evaluating educational programs.

3. Effectiveness/cost evaluations produce valid data for use in improving educational programs.

4. Educational programs at all levels can make use of the model to evaluate their programs.

5. Most of the effectiveness measures created during this trial evaluation can be used for evaluations of any area of instruction having the same objectives.

6. The resources required for the conduct of an effectiveness/cost evaluation are well within the capability of the typical school system.

CUTLER, SANFORD. Personal Learning Experiences at Rhode Island College in Two Areas of Student Personnel Services: Student Financial Aid and Counseling. Supervised Field Practicum, M.A., 1970, University of Rhode Island. 29 p. Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum provided field experience at Rhode Island College in the student personnel areas of financial aid and counseling. The objectives were: (1) to become familiar with selected aspects of student financial aid, (2) to gain experience counseling individual students, and (3) to gain leadership experience in group counseling.

Method--The procedure followed to meet these objectives was actual work experience in the student personnel offices. Participation included individual and group counseling of students and performance of duties in the financial aid office.

Findings--The results of the practicum were: (1) greater knowledge of the financial aid problems and procedures at Rhode Island College, (2) an increased understanding of individual and group counseling, and (3) increased ability to use group leadership skills.

D'AREZZO, CHARLES C. Personal Learning Experiences Attained by Contrasting the Continuing Education Program at Rhode Island Junior College within its Existing Designed Structure Against the Present Needs of the Adult Community of Rhode Island. Supervised Field Practicum, M.A., 1970, University of Rhode Island. 45 p. Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum was planned to provide the writer with an opportunity for gaining experience in: (1) designing and constructing a questionnaire to be used in researching needs of the adult learner, (2) conducting interviews with adult learners on a one to one relationship, (3) conducting interviews with adult learners in a group situation, and (4) exploring what some of the fiscal problems are in preparing and administering a Continuing Education Budget at Rhode Island Junior College.

Method--The following procedures were used: (1) exploring textbooks and materials which deal with constructing and administering questionnaires, (2) exploring textbooks and materials which deal with conducting individual interviews and then applying the findings by conducting individual interviews, (3) exploring textbooks and materials which deal with conducting group interviews and then applying the findings by conducting group interviews, and (4) participating in reviewing the cost of adult education at Rhode Island Junior College and also what determines application of specific funds within the total budget.

Findings--Experience was gained through the three phases of the learning experience; researching how to construct and use a questionnaire, constructing the questionnaire, and administering of the questionnaire. Experience and confidence were gained by conducting individual and group interviews, and the writer also became aware of the needs of the adult learner. The writer became aware of fidcal matters pertaining to educating the adult learner and also gained insight into the funds needed to implement and support Continuing Education Programs.

The writer suggests these recommendations as a result of this practicum: (1) the selection criteria for the advisory committee for Continuing Education at Rhode Island Junior College be reviewed, (2) awareness of colleagues who could offer support in conducting surveys, (3) awareness of the support that data processing could offer in providing statistical reinforcement, and (4) awareness of persons' feelings when conducting interviews.

DAWSON, LUCILLE C. Personal Learning Experience Attained Through the Establishment of an Educational Guidance Program for a Group of Narragansett Indian Youth. Supervised Field Practicum, M.S., 1970, University of Rhode Island. 23 p. Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum was planned to provide the writer with an opportunity for gaining experience in: (1) establishing an educational guidance program for a group of Narragansett Indian youth, (2) utilizing various methods and techniques of providing guidance and (3) setting up an educational guidance program to meet their needs.

Method--The following procedures were used: (1) selection of groups, (2) obtaining data about each student, (3) a series of guidance sessions were planned for individuals and groups, (4) utilizing the group guidance sessions as an aid to the individual guidance sessions, (5) utilizing students' home for individual conferences, and (6) a period of five months totaling approximately four hundred hours of guidance was provided for twenty students and their parents.

Findings--The objectives stated in the proposal for this practicum were achieved, although not as initially planned. The writer did have an opportunity to work with a group of Narragansett Indian youth and their parents. This was one of the main objectives of the project. In addition the following objectives were accomplished: (1) verification of the shortage and/or the lack of educational guidance for Narragansett Indian youth, (2) overwhelming response to participate in guidance sessions, (3) establishment of an educational guidance program that can be continued by other members of the tribe, and (5) obtaining financial assistance to continue in higher education for Narragansett Indian youth as well as obtaining financial assistance to continue my own education.

The writer makes these recommendations as a result of this practicum: (1) the established educational guidance programs should be expanded to include all Narragansett Indian youth, (2) more time should be allotted for the educational guidance of Narragansett Indian students and their parents, (3) the Narragansett Indian youth and their parents should encourage other members of the Indian tribe to participate in this program, and (4) the writer should aid others within the tribe to continue this educational guidance program for all Narragansett Indian youth.

DAY, ROBERT E. Personal Learning Experience Gained Through Attempting to Change the Behavior of a Group of Delinquent Boys. Supervised Field Practicum, M.A., 1970, University of Rhode Island. 37 p. Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum was planned to provide the writer an opportunity for gaining experience in: (1) becoming aware of the reasons delinquent boys give for their behavior, (2) developing change in the behavior of a group of delinquent boys at an institutional school, and (3) evaluating the student's behavior to determine if a change occurred.

Method--The following procedures were used: (1) while teaching and interacting with the boys an informal atmosphere was created (no required attendance, free movement in the shop area, smoking, etc.), (2) a class was established in the woodworking shop for the purpose of teaching skills applicable to semi-skilled labor and home repairs and counseling to change the behavior of the boys, (3) at all times "doing for others" was stressed, and (4) the students' behavior was evaluated by school behavior reports, interviews with personnel who have contact with students and personal observations.

Findings--The objectives stated in the proposal were achieved to different degrees of satisfaction: (1) the writer organized and implemented a program for delinquent boys, which the boys enjoyed, (2) the behavior of two of the four boys improved, (3) the boys acted to satisfy their immediate needs without regard for the future, (4) the boys did not consider their delinquent behavior wrong, (5) none of the boys took advantage of the informal atmosphere, and (6) by the time a boy is committed to an institutional school his habits and life patterns are established. It is a very difficult task for an institution to change values, behavior and life patterns that a delinquent boy has spent fifteen or sixteen years acquiring.

As a result of this practicum the writer recommends helping delinquent boys before they reach the stage of being committed to an institution, if we are to be successful in our fight against juvenile delinquency. One possible solution would be for the federal government to sponsor a program similar to the Big Brother movement, where the delinquent boy is worked with on a one to one ratio. A one to one ratio is very important.

DICK, ROY F. The Effect of Apparel on Self Image. Thesis, M.S., 1969, West Virginia University. 45 p.. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was to determine the effect apparel has on acceptance of a student by his peer group, his decision to stay in school, and his continuation toward an occupation of gainful employment.

Method--Data for this study were collected by means of a questionnaire sent to 395 members of 4-H Clubs in Marion County, West Virginia and to their 253 parents. The results were processed by the West Virginia University Computer Center and analyzed according to the size of family, grade in school and the whole group by parents and students.

Findings--Suitable clothing definitely stimulates a better disposition. Unsuitable clothing causes people to be embarrassed. Becoming apparel helps build self-confidence. One's over-all happiness is promoted by appropriate dress. Proper style of clothes helps a person become well-organized. Socio-economically disadvantaged students would possibly join vocational classes if more money were available for purchasing suitable clothes for them to wear. Those who wore becoming apparel are favored at job interviews. Clothing styles have no relationship with the capability of a student. Improper dress does not cause problem students. Appropriately dressed students feel they are a part of the group.

DICKSON, GERALDINE G., and WILLIAM H. WAKEFIELD A Survey of Manpower Needs in the Commercial Nursery Industry. Study was conducted in a 13-county area of Southeastern New York State in the summer of 1969, initiated by the Bureau of Agricultural Education of the New York State Education Department, and conducted through the services of the New York Research and Coordination Unit, Albany.

Purpose--The study was conducted to determine: (1) the need for nursery workers in the New York Metropolitan area, and (2) the tasks which nursery workers commonly perform.

Method--The New York Nurserymen's Association provided staff to obtain a listing of all nursery businesses in Southeastern New York as defined by the Division of Plan Industry, Department of Agriculture and Markets of New York.

The 1,143 registered nursery businesses in Southeastern New York became the sample.

A questionnaire was developed to obtain the following information: (1) background data on the nurseries, i.e., size, primary product and function, (2) number, salary range and duties of present employees, and (3) number, salary range and duties of projected manpower. The initial instrument was pretested on 5 percent of the population to be sampled.

Total response to the questionnaire was 36.8% of the population identified by the Department of Agriculture and Markets.

Findings-- 157 nurseries were selected as representatives of the overall industry in the study area. Of the nursery businesses selected, 40% indicated that additional workers were needed. Suffolk, Orange, Queens, Rockland and Sullivan counties expressed the greatest need for additional workers.

Over 60% of the nurseries used in the sample indicated growing was the primary function of their business.

The larger nursery businesses ($50,000 and above) have the greatest need for present and projected additional help.

A follow-up study using the nursery businesses identified by the initial survey will provide additional information relative to tasks performed by workers and the amount of prior instruction required for development of skills.

DONOVAN, JOHN W. Personal Learning Experience Through the Process of Building a Youth Development Program for Lower South Providence. Supervised Field Practicum, M.A., 1970, University of Rhode Island. 42 p Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum was planned to provide the writer with an opportunity for gaining experience in: (1) assisting teenagers in the writing of a Youth Development Program, (2) gaining skills in conducting meetings, (3) gaining skills in serving as advisor of a youth group, (4) gaining skill in the presentation of new ideas, and (5) gaining experience in working with advisory boards.

Method--The following procedures were used: (1) a preliminary meeting was held with a group of teenagers from the Lower South Providence area to discuss the aspects of the Youth Development Program, (2) a rough draft of the program was prepared as a result of this meeting and presented at a second meeting where it was reviewed, (3) a committee of teenagers was formed to contact all youth serving agencies presently serving the Lower South Providence neighborhood. They were also responsible for drafting the final copy of the proposal, (4) a meeting was held with the Youth Sub Committee of the Neighborhood Advisory Committee to explore the possibility of funding such a program, (5) the meeting of the youth serving agencies was chaired by a panel consisting of three teenagers. They explained the proposed program and answered questions, (6) a meeting was held with the Community Action Agency representatives to revise the proposal to meet federal requirements, and (7) the revised proposal was then reviewed by the teenagers and finally accepted by them.

Findings--The objective stated in the proposal for this practicum was achieved, although not precisely as planned. The writer did have an opportunity to work with teenagers which was the chief reason for the existence of the project. In addition, the following was accomplished: (1) the writer gained experience in communication with teenagers, (2) experience was gained in conducting meetings by working with a group of youth to assist them in writing a specific program, (3) the writer was able to gain leadership skills by serving as chairman at meetings relating to the Youth Development Program, and (4) the writer found it unexpectedly easy to gain self confidence in working with the Neighborhood Advisory Council in presenting new ideas concerning the Youth Development Program.

The writer suggests the following as a result of this practicum: I would recommend that future efforts be attempted in the area of self determination. Youth deserve the right to be represented in all matters concerning their lives. The true responsibility of the administrator of youth programs is to attempt to build confidence and faith in youth's ability to conduct their own activities and guide their own future.

FINT, ALVIN WAYNE. Some Job Skills and Values Needed by Vocational Agriculture Students for Job Entry into the Dairy Production Industry. Thesis, M.S., 1970, West Virginia University, 123 p. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was to determine the job skills and values needed by vocational agriculture graduates to become gainfully employed in the dairy production industry and to compile a suggested course outline for dairy production students at the secondary level.

Method--Data for this study were collected through questionnaires mailed to one hundred ninety-four members of the West Virginia Dairy Herd Improvement Association. The results were processed through the facilities of the West Virginia University Computer Center.

Findings--The West Virginia Dairy Herd Improvement Association members want employees that have had instruction in dairy production along with work experience. A majority of the dairymen would like to evaluate a students record and list of accomplishments before hiring him. Dairymen advised that they should provide 50 to 75 percent of the training for students enrolled in a dairy production program. There are jobs available in dairy production for those who are properly trained and willing to work long, hard hours.

Ten most important job skills and values suggested for dairy production are: use time efficiently; milking procedures; displays initiative; operation and care of milking equipment; care of dairy calves; displays pleasant, courteous personality; barn sanitation; cleaning milking utensils; machinery operation and care and knowledge of feed quality.

Considered of least importance by the respondents were these ten job skills and values: pasteurization of milk; milk process and trends; marketing of milk; soil testing; fertilizer analysis; seedbed preparation; bacteria count; internal parasites control; weed and brush control and fence building.

FYOCK, DONALD H. The Relationship of Agricultural Interest to Eight Other Variables of Eighth Grade Boys in the Greater Johnstown Area. Paper, M.Ed., 1970, The Pennsylvania State University. 41 p Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose--To aid persons involved in the counseling of students to identify students with high agricultural interest. It was intended to acquaint counselors with the Vocational Agriculture Interest Inventory and to indicate relationships of eight variables with the agricultural interest scores.

Method--The Vocational Agriculture Interest Inventory was administered to 900 eighth grade boys in nine junior high schools of seven school districts in the greater Johnstown, Pennsylvania area. A survey of each student included the following factors: (1) residence; (2) farm experience; (3) intent to enter an agricultural occupation; (4) intent to enter post-high school education; (5) intent to enter the area vocational-technical school; (6) desire to take an agricultural course in high school; (7) occupation of father; (8) age of student. The sample included all eighth grade boys enrolled in the nine schools except those who were absent from school the day the inventory was administered.

The data were processed by the Examination Services Department and the Computation Center of the Pennsylvania State University.

Findings--Students who lived on farms scored higher on the agricultural interest inventory than students who lived in rural non-farm or urban homes. Students with farm experience scored higher than those with no farm experience. Students showing intent to enter an agricultural occupation scored nearly twice as high as those showing no intent to do so.

There was no difference in the scores of those intending to enter post-high school education and those planning no post-high school education. Students who planned to enter the area vocational-technical school scored higher than those planning not to enter the area vocational-technical school. Students desiring to take an agricultural course in high school scored higher than those planning not to do so. Students whose fathers were either full-time or part-time farmers scored higher than those with non-farmer fathers. Age had no bearing on inventory scores.

FUCILE, NORMAN M. Personal Learning Experiences Attained in Conducting a Series of Group Discussions with an Advisory Committee for Distributive Education at Rogers High Schoo' in Newport, Rhode Island. 20 p. Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum was planned to provide the writer with an opportunity for gaining experience in: (1) organizing and implementing an advisory committee for Distributive Education, (2) conducting a series of adult group discussion, (3) practicing adult leadership skills, such as communication of goals, developing group participation, and achieving group identity, and (4) conducting a self-evaluation on my performance as the group leader.

Method--The following procedures were used: (1) permission was obtained to work within the framework of the Vocational Department at Rogers High School, (2) permission was obtained to attend a series of advisory committee meetings of both local Vocational and state sponsored Distributive Education programs, (3) members were selected for my Distributive Education advisory committee, (4) only employers who participated in the 1968-1969 Distributive Education program, or those employers who would participate in the current 1969-1970 Distributive Education program were selected to serve on the advisory committee, (5) members of the advisory committee found it difficult to attend meetings in the evenings as planned and it was suggested that meetings be held at unspecified times with only a few of the members present in the early afternoon every two weeks, and (6) group goals were discussed at the meetings and the members set about achieving the goals.

Findings--The objectives stated in the proposal for this practicum were achieved, although not precisely as planned. The writer did have an opportunity to organize and implement an advisory committee for Distributive Education which was the initial step in trying to strengthen the program. In addition, the following were accomplished: (1) the more involved the members were, the easier the goals of the group were achieved, (2) before selecting businessmen as members of an advisory committee, one must consider the amount of time the members can devote to the project, (3) group participation proved difficult to achieve, although the members achieved the goals agreed upon, (4) group identity was successfully attained as the advisory committee was necessarily divided into three separate working groups, and (5) the practicum presented the writer with opportunity to conduct a self-appraisal at many different times throughout the project while conducting the small group discussions.

The writer suggests these recommendations as a result of this practicum: (1) as part of the selection criteria for the advisory committee for Distributive Education, I would use familiarity and knowledge of the Distributive Education program along with availability of time, and (2) meetings should not be held during the summer months as the participating students have no opportunity to become involved with the work of the advisory committee.

GALLUCCI, A. ROBERT. Personal Learning Experience Gained in Introducing a New Subject Area into an Existing Industrial Arts Curriculum. Supervised Field Practicum, M.S., 1970, University of Rhode Island. 31 p. Department of Education, University of Rhode Island, Kingston.

Purpose--To provide an opportunity for the writer to discover the problems associated with planning a new subject area.

Method--The following procedures were utilized: (1) organizing and conducting interviews with industrial management to establish if a need exists for the teaching of Fluidics, (2) meeting with a small group of teachers to explain the proposed program and to seek advice as to the implementation of the program,(3) visiting other schools to observe Fluidics programs in operation, and (4) collecting data from the above sources and researching written material for writing a curriculum guide and preparing cost estimates for the program.

A total of twelve meetings, interviews and visitations were conducted by the writer in order to better understand the field of study which was being proposed. The writer also solicited opinions from the participants relative to course content and the feasibility of implementation.

Findings--The writer learned as a result of his meetings with the various people: (1) an interviewer or group leader should have adequate knowledge of the subject being discussed, (2) meetings which are arranged by a third party may not always serve the need of the researcher, (3) the physical location of an interview can be a significant factor in the success of the meeting, and (4) adequate procedures for the collection of data are imperative when meetings are held over a period of time.

As a result of this practicum, the writer has recommended to the school administration the adoption of a pilot program. The curriculum guide in this report will assist the teacher and administration to implement the program.

GLEE, ULYSSES S. Relative Effectiveness of Auto-Instructional Conventional Methods in Teaching Manipulative Skills in Horticulture to Students with Special Needs. Thesis, M.S., 1970, University of Maryland, College Park, Maryland.

Purpose--This study was designed to determine the relative effectiveness of teaching manipulative skills to special need students using two methods of instruction: a self instructional method versus a conventional lecture and demonstration teaching method. It was hypothesized that students with special needs, when presented a program of instruction via auto-instruction reinforced by visual aids, would achieve the same degree of skill as those students taught by conventional methods of lecture and demonstration reinforced by visual aids.

Method--This study, which involved twelve students randomly assigned to experimental and control groups, covered a period of six weeks. The collection of data was performed at the Croom Vocational School, Prince George's County, Upper Marlboro, Maryland. The experimental design consisted of two instructional modes, designated treatment, and control. Each group was exposed to each mode of instruction. Other skills were presented in the same fashion as the first; however, the original experimental and control groups were switched after three weeks of the experiment. This insured exposure of both groups to the conventional and auto-instructional techniques. After each skill, an achievement test was given, consisting of the examination of the student's performance, and the time involved in completing the skill. Analysis of variance was employed to determine the differences in effectiveness of the methods used in the study.

Findings--The findings of this study revealed no significant differences between the means of the control and experimental treatments. This was true concerning the observation and retention factors, based on the two-way analysis of variance. When treatment by skills was analyzed against time, a significant interaction at the .01 level occurred. The control group consumed less time than the experimental group. With this exception, the data collected supported the hypothesis.

GROVER, JOHN K. An Evaluation of the Characteristics of a Training Station Used for Cooperative Occupational Education in Agriculture. Project, M.Ed., 1970, Rutgers University, The State University of New Jersey. 27 p. Library, Rutgers University, New Brunswick.

Purpose--To develop an instrument for selecting cooperative occupational training stations in vocational agriculture; to determine the characteristics of a desirable training station; and to weigh these characteristics.

Method--A questionnaire was constructed from lists of characteristics which researchers and practitioners indicated as being important for the selection of desirable training stations. Characteristics were listed with descriptive statements under each and a rating scale was provided. Thirty teachers of agriculture from Connecticut, Maryland, New York, and Pennsylvania who were coordinators of cooperative training programs provided the data by responding to the questionnaire.

Findings--The characteristics used for selecting training stations for cooperative occupational education in agriculture were not equally important. Eleven characteristics found helpful in evaluating a training station in order of importance with weightings indicated were: Wages, 14; Interest in Training, 12; Working Conditions, 12; On-the-Job Supervision, 12; Facilities, 10; Attitude of Employer, 10; Accessibility of the Station, 9; Stability of Employment, 7; Opportunity for Rotation of Jobs, 5; Opportunity for Permanent Employment, 5; and Reputation of the Business, 4.

In addition to the eleven characteristics, twenty-seven descriptive statements are included on the one-page instrument recommended as a result of the study to determine the desirability of proposed training stations for cooperative occupational education in agriculture.

HALL, LEROY E. A Study of Experiences that Influence Ninth and Tenth Grade Students to Enroll in Agriculture. Paper, M.Ed., 1970, The Pennsylvania State University. 60 p. Library, The Pennsylvania State University, University Park.

Purpose--To determine the agricultural experiences that influenced selected eighth or ninth grade students to elect or not to elect the agriculture course in ninth or tenth grade.

Method--The study included 273 students in 7 schools. Of these, 139 were enrolled in agriculture and 134 were not enrolled in agriculture. The data were gathered with a questionnaire containing 30 experiences that students rated according to the influence each experience had on their decision to elect or not to elect agriculture. The questionnaire was administered by teachers of agriculture in the cooperating schools following an orientation meeting with the investigator.

The number of students from farms enrolled in agriculture was, insofar as possible, the same as the number of students from farms not enrolled in agriculture. The students not enrolled in agriculture were selected from the same schools the agriculture students had attended. Students rated each experience as: very important, of some importance, or of no importance. The experiences were ranked according to index value.

Findings--In general, the study found that students enrolled in agriculture reacted to the experiences in a similar manner whether or not they lived on farms; that students not enrolled in agriculture reacted to the experiences in a similar manner whether or not they lived on farms. The two groups, however, reacted to the experiences in a different manner. Agriculture students tended to rate farm experiences as the most important items that influenced them to elect agriculture. Discussing agriculture occupations and jobs with the teacher of agriculture, parents, farmers, and persons employed in agriculture occupations rated high as experiences that influenced non-farm reared students to enroll in agriculture. Students not enrolled in agriculture tended to consider career oriented experiences relating to people most important in their decisions not to enroll in agriculture.

Eleven of the sixteen experiences that had the greatest influence on students enrolling in agriculture are the same experiences that cause non-agriculture students not to enroll in agriculture.

HOOVER, NORMAN K. and GLENN Z. STEVENS. Development and ion of Occupational Information in Agribusiness. Staff Study, 195. p. Final Report, Project 19002, Research Coordinating Unit, Pennsy nia Department of Education, Harrisburg.

Purpose--To organize occupational information in the seven areas of instruction in agribusiness (agricultural production, agricultural supplies, agricultural mechanics, agricultural products, ornamental horticulture, agricultural resources, and forestry) for use by instructors and counselors with high school students. To field test experimentally several procedures in inservice teacher education for occupational guidance of boys and girls in rural communities.

Method--Occupational briefs were written for five job titles in each of seven industry classifications corresponding to the instruction areas listed above and five for which high schools can offer pre-professional training. A teaching plan with five problem areas was prepared and discussed with instructors and guidance counselors in six patterns of inservice teacher education. An achievement test in two parts, guidance information and agricultural occupations knowledge, was given to a total of 1463 students in 99 schools over three years. A semantic differential attitude test and an interest inventory also were used.

Findings--Inservice teacher education methods involving two personal conferences of two hours each with the teachers and guidance counselors at their schools resulted in the best student test scores. There were positive correlations of agricultural interest, father's occupation and student I.Q. with student expressed intentions to elect agriculture in the next school year, to obtain post-high school education, and to enter an agribusiness occupation.

The instructional materials were revised after the first year of the study, published and made available to all schools. The second year was essentially a validation study with classes in schools in a different geographic area. The special feature of the third year was a change to a sample of 21 first and second year teachers. Again it was demonstrated that a university resource person holding two individual teacher conferences at each school to acquaint the instructors and guidance counselors with the student resource booklet, the teacher's unit plan, and supplementary materials enabled ahe students to show significant achievement. It became evident that continued inservice assistance to teachers is needed in the form of differentiated part scores on a revised agribusiness and biological interest inventory with norms for girls as well as boys who may elect new courses appropriate to a wider range of occupations.

HUMMER, JOHN W. An Instructional Program in the Establishment, Operation and Management of Campgrounds in Pennsylvania. Paper, M.Ed., 1970, The Pennsylvania State University, 84 p. Library, The Pennsylvania State University, University Park.

Purpose--To provide information that could be used by teachers of agriculture to develop an instructional program for operators, managers and employees of campgrounds in Northwestern pennsylvania.

Method--A survey form for rating selected competences was used to obtain the information necessary to the objectives of the study. The district rangers, state park superintendents and 10 private campground operators in and near the Allegheny National Forest were surveyed. The form completed by the campground operators also provided the following information: (1) size of the campground in number of sites and the expected future expansion, (2) extent of operator training for campground management, (3) desire for trained employees, (4) number of employees, and (5) degree of importance of 140 agricultural competences to the operation and management of campground.

A weighted factor score for each agricultural competence was computed from the opinions of the campground operators on whether the competence was very important, important or not important. An importance score was obtained in this manner for the campground operators, full time employees and part time employees. These values were to be used in helping teachers design a course in campground management and operation.

Findings--A total of 231 persons were working on campgrounds in the area surveyed. This total included 31 operators, 89 full time employees and 111 part time employees. A 40 percent expansion in employee numbers in the next five years was predicted.

The superintendents of public camping areas were professionally trained foresters with considerable training and experience in campground management. Private campground operators had had little or no training or experience prior to starting a campground. Fifty percent of the private campground operators expressed a desire for training in campground management for themselves and 70 percent wanted employees with such training. Obtaining suitable employees was of special concern to all campground operators. Students on a work experience project would be welcome.

For training programs, the highest ratings were given to competences and skills in human relations and safety. Next in importance were skills in concrete work, plumbing and sanitation, carpentry and mechanics. Plant and soil science skills followed and animal science knowledges and skills were lowest in importance.

JOHNSON, ROBERT L. Personal Learning Experienced During the Process of Developing a Pre-Camp Orientation Program for Counselors at the Newport Y.M.C.A. Day Camp. Supervised Field Practicum, M.A., 1970, University of Rhode Island. 59 p. Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum was planned to provide the writer with an opportunity to gain experience in: (1) assessing the training needs of day camp counselors, (2) designing a training program based upon the needs of these counselors, and (3) using leadership skills.

Method--The following procedures were used: (1) permission was obtained to conduct the practicum at the Newport Y.M.C.A. Day Camp, (2) conferences with New England Area Y.M.C.A. Staff related to camping and and the local camp administrators were held, (3) group discussion sessions were conducted with the Newport Y.M.C.A. Day Camp counselors, (4) a questionnaire was constructed to determine training needs, and was completed by each camp counselor, (5) personal observation of counselors on the job and of the general camp operation was conducted, (6) review and analysis of all data collected was made and a pre-camp orientation course for counselors was developed.

Findings--The objectives stated in the proposal for this practicum were achieved. The writer gained a great deal of expertise in assessing the training needs of day camp counselors. An appreciation and understanding of the methods for getting information about training needs was obtained, particularly in the area of questionnaire construction and administering. A pre-camp orientation course for counselors was developed, design of which was based upon the training needs as determined in this study. A great deal of leadership experience and skill was obtained in the group meetings held with counselors where the writer served as discussion leader. One significant result coming directly from the discussion group sessions, was the decision to make the format of the pre-camp orientation informal in nature and based upon a group discussion type of learning situation. An emphasis on the human relations aspect of each training session is strongly recommended, since the practicum has indicated that this is one area where a counselor requires real expertise.

The writer suggests these recommendations as a result of this practicum experience: (1) that the pre-camp orientation course developed be utilized by the Newport Y.M.C.A. in the training of their counselors on a trial basis, and that the course be evaluated by those actually involved upon completion, (2) in the process of conducting training sessions, leaders focus upon the human relations aspects of each topic, (3) training sessions be informal in nature, based upon group discussions, (4) that personnel responsible for training emphasize that camping philosophy centers about the camper, and recognizes that camping is an integral part of child development and growth. Counselors must have the ability to ascertain interests and with these as a basic guide, integrate camper activity into general camp program, or modify existing program to include newly discovered interests.

KATZ, ESNTHER T. Increasing Personal Learning Experiences through Preparing a Newsletter for Parents, Teachers, and School Personnel Interested in Special Education. Supervised Field Practicum, M.A., 1970, University of Rhode Island, 43 p. Department of Education, University of Rhode Island, Kingston.

Purpose-- This practicum was planned to provide the writer with an opportunity for (1) increasing personal learning and experiences in planning and developing a newsletter for parents, teachers, and school personnel interested in special education, (2) securing feedback as to the usefulness of this publication, and (3) gaining experience in working with adults.

Method--The following procedures were used: (1) the need for this newsletter was determined through an inter- departmental memo, (2) permission was obtained to work within the framework of the special education office of the Providence School Department, (3) data were gathered concerning pupils and methods being used in special education classes, (4) parents and teachers were encouraged to contribute their services and projects which became topics for succeeding newsletters, (5) activities of pupils in various centers were studied in an effort to identify different methods of educating handicapped children, (6) a series of three newsletters were planned, developed, and published, (7) the population receiving the newsletter were sampled through a written questionnaire as to the usefulness of the publication.

Findings--The objectives stated in the proposal for this practicum were achieved. The writer did have an opportunity to gain personal learning experiences through preparing a newsletter which was the chief reason for the existence of the project. In addition the following were accomplished: (1) several methods were used to encourage participation in planning and developing the newsletter, (2) the writer found it to be an unexpectedly pleasant means of gaining personal learning experiences in working with adults, (3) newsletters were planned and developed which served as an important means of communication for the special education department, (4) although only one written evaluation was used, it provided an opportunity to learn the effectiveness of feedback as a means of evaluation.

The writer suggests these recommendations as a result of this practicum: (1) a continued effort should be made to reach parents, teachers, and school personnel interested in special education, (2) those who edit a newsletter must be knowledgeable of the people the newsletter reaches, (3) for true communications to occur, each person involved must strive to understand the other person, and (4) the writer plans to continue with the publication of this newsletter on a regular basis.

KISSELL, ARNOLD K. The Present and Future Use of Aircraft in Agriculture and Associated Occupations in Pennsylvania with Predictions for the Future of Agricultural Aviation. Thesis, M.S., 1970, The Pennsylvania State University. 67 p. Library, The Pennsylvania State University, University Park.

Purpose--To investigate present status and the future of agricultural aviation in Pennsylvania: (1) the uses of aircraft for agricultural purposes, (2) the occupations directly related to agricultural aviation, and (3) the projected future growth and development of agricultural aviation.

Methods--Three different groups of people were involved. The first group included all known active aerial applicators in Pennsylvania doing agricultural work. The second group included agricultural aircraft specialists employed by the manufacturers of agricultural aircraft in the United States. The third group was a sample of the active membership of the Flying Farmer Association in Pennsylvania. Separate questionnaires were used with the three groups but the same questions were asked each group concerning predictions for the future of agricultural aviation. The aerial applicators were surveyed by use of a questionnaire and a personal interview. The aircraft manufacturers were surveyed by use of a mailed questionnaire resulting in a better than 80 percent return. The Flying Farmer group was personally surveyed by the investigator with the use of a questionnaire.

Findings--No significant differences were found by analysis of variance among the three groups in their predictions for the future of agricultural aviation for 16 of the 17 questions asked. A decrease in aerial application of dusts was predicted by the manufacturers. The general means calculated for ratings given by each group were based on a five point rating scale ranging from five (great increase) to one (great decrease) were: aerial applicators 3.74, aircraft manufacturers 4.19 and Flying Farmers 4.13.

The number of uses of aircraft for agricultural purposes has increased during the past five years. The acreages or extent of aerial application remained constant or increased for nearly all purposes. Seasonal factors have an influence on aircraft use. The most important uses of aircraft in Pennsylvania are for (1) spraying of alfalfa, (2) spraying of timeber and (3) aerial observation of timber land.

The size, the type of operation and the number of employees varied greatly for agricultural aerial application companies located in Pennsylvania. The job titles and duties of the employees in agricultural aviation jobs also were quite varied. The total number employed during the past season by Pennsylvania companies was about 107, not all working in Pennsylvania, with a range from one to 42 persons per company.

LEITER, ROBERT OLLER. Development of a Propagation, Rotation, and Management Plan for a School Ornamental Nursery. Paper, M.Ed., 1970, The Pennsylvania State University, 80 p. Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose--(1) To develop a plan describing how various trees, shrubs, ground covers and vines can be propagated in a school nursery together with the cultural techniques for producing them to marketable size. (2) To develop a school nursery rotation schedule for field grown stock and container grown stock.

Method--Five large commercial nurseries were visited to obtain the information for the study. From the data received a propagation table and rotation plans and tables were developed. Seven vocational agriculture teachers cooperated with the study and from their recommendations information has been compiled on nursery size, propagation area size and propagation mediums.

Findings--Plants are propagated best by various methods as shown in the propagation methods table. A propagation area consisting of 80 square feet of greenhouse space with a misting system is needed. Different plans were found for management of container grown and field grown nursery stock along with a rotation table for each.

LONG, RICHARD ALLISON. Socioeconomic Factors Which May Effect Part-Time Farmers Education in Butler County, Pennsylvania. Thesis, M.S., 1969, West Virginia University, 123 p. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was to determine the size and scope of business of part-time farmers in Butler County, Pennsylvania; type of off-farm employment in which they are engaged, and the desire for educational assistance concerning their farming programs.

Method--Data were obtained from a survey interview of one hundred randomly selected part-time operations taken from the County Agricultural Stabilization Conservation Service mailing list.

Findings--The size of farming operation for part-time farmers in Butler County is smaller on the average than all farms in the county.

Off-farm employment is readily available at the present time and accounts in part for a low amount of farm activity by part-time farmers. In light of this a further study should be conducted to determine if part-time farming activities increase during periods of low available off-farm employment.

In Butler County, part-time farming appears to be a permanent way of life for the majority of those responding as opposed to a transition phase into or out of agriculture.

There is a desire and need for educational programs geared to the level of the part-time operators as indicated by 38.4 percent of the respondents who stated a desire for agriculture information.

MAXWELL, ROBERT H. The Relationship of Social Differentiation to Academic Success in Secondary School and Occupational Patterns in Kenya: The Chavakali Case. Thesis, Ph. D., 1970, Cornell University. 278 p. Library, Cornell University, Ithaca, New York.

Purpose--The major purpose of this study was to examine the structural relationships of home, village, secondary school experience, present occupational status, and post secondary residence of selected former students of the Chavakali Secondary School in Maragoli, Western Providence, Kenya. Related occupational information regarding salary, job satisfaction, and job tenure was also collected, and a modernity measure was applied to all respondents.

Method--A list of 299 student names for the five-year period 1962-66 was furnished by the Chavakali School. School files yielded information regarding academic performance of the 229 students who completed their schooling there. The questionnaire was self-administered and either returned by mail or personally collected by the investigator. Thirty personal interviews in greater depth provided the background for the abbreviated case studies.

Guttman scales of differentiation were developed from data collected on parental homes, reference villages and post secondary residences of all respondents. The coefficients of reproducibility and scalability exceeded the minimum acceptable standards for all three scales.

The period of field research in Kenya was ten weeks during summer, 1969.

Findings--The major findings include the following: (1) There is a significant correlation between parental home diversity and academic success, but no significant correlation was discovered between parental home diversity and either occupational status or post secondary residence. (2) Academic success is positively correlated with occupational status but is not related to post secondary residence. (3) There is no significant correlation between village differentiation and either parental home diversity, academic success, occupational status, or post secondary residence. (4) The occupational rating scale showed a significant correlation with both salary and academic success. A negative correlation was shown between the occupational status rankings and job tenure. (5) Secondary schooling has had a great demographic effect upon the respondents as less than 20 percent have remained in their home area after secondary schooling and what further training they re-eived. (6) Measurable improvements were found in parental home diversity, village differentiation, educational level of parents, modernity, academic success achieved, and levels significantly correlated with post secondary residence, academic success and training received. There was a negatively significant correlation between modernity and village differentiation. (8) In general, there were no differences between students who had studied agriculture and those who had not on ratings for modernity, job satisfaction, present salary levels, occupational status, number of jobs held since leaving secondary school, and job tenure in present job.

MCGHEE, MAXIE BENNETT. Socioeconomic Characteristics of Young Farmers Enrolled in Vocational Agriculture Classes in West Virginia. Thesis, M.S., 1970, West Virginia University, 92 p. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was to determine the socioeconomic characteristics of young farmers enrolled in the young farmer program in West Virginia, and in turn, hopefully improve the instructional phase and scope of the program in the State.

Method--Data for this study were secured through a questionnaire sent to all young farmers enrolled in the program during the 1968-69 school year These data were summarized and are found in prose and tabulated form within the body of this study.

Findings--Average age of young farmers was 27-28 years. Seventy-three percent of the young farmers had been enrolled in vocational agriculture in high school with an average of 3.93 years of membership in Future Farmers of America Organization. Ninety-four percent of the young farmers favored the establishment of a young farmer organization. The average investment in farming for the total young farmer responses was $21,337.00 with an annual gross farm income of $6,794.00 even though the annual net farm income for the respondents was less than $1,500.00. The teacher of vocational agriculture was listed as the greatest source of information for 53 percent of the young farmers, with farm magazines being rated second.

Eighty percent of the young farmers were employed in some type of off-farm work in which they spent an average of thirty-eight hours per week from which they earned an average annual income of $4,676.97. A partnership arrangement was the major type of farming status indicated by the young farmers. The beef enterprise was shown to be the major source of income for the young farmers contacted. Dairy was second with swine being in third place of importance. Fifty percent of them had a Soil Conservation Service Plan for their farm.

HILLER, GRANT M. A Teaching Experiment Comparing Textular and Programmed Learning Methods, Project Report, M. Ed., 1970, Department of Vocational and Technical Education, Rutgers University, New Brunswick, New Jersey.

The major purpose of this experiment was to measure the relative effectiveness of two methods of teaching a module Principles of Plant Growth. The two teaching methods were programmed learning and textular method. The criterion was a plant science test, Principles of Plant Growth.

Minor purposes were to discover significant differences of learning effectiveness in terms of reading level, grade level and principles of plant growth. The five principles of plant growth used in the study were germination, photosynthesis, nutrient absorption, respiration and transpiration.

The programmed learning module was structured to present subject matter on five principles of plant growth in a series of items to elicit responses from the student working at his own rate. The textular module was reproduced exactly as it appeared in the textbook Crop Production.

Schools assigned to both experimental teaching methods were given sufficient instructional booklets to complete the teaching module. The suggested time period for completion of the experiment was one week.

Two vocational agriculture departments in New Jersey, and two vocational agriculture departments in Pennsylvania with adequate facilities and interested teachers were selected for the study. One school in each state used programmed learning and one school in each state used the textular method. The design included four classes from each school. Ten students from each class were selected at random for statistical study. The experimental sample included 160 randomly selected vocational agriculture students.

Individual differences among students were partially compared by subject matter pre-test scores and reading levels furnished by the schools. Plant growth test scores were the criterion measures. The Student's *t*-test was used to test the hypotheses of the experiment.

Findings of the experiment indicated that (1) achievement in programmed learning by students was significantly higher than it was for students using the textular method, (2) students in the upper third of the programmed learning reading level scored higher than students in the upper third of the textular group, (3) students in the programmed learning group scored significantly higher than students in the textular group for the five principles of plant growth and (4) students in the programmed learning group scored significantly higher than students using the textular method when compared by grade level.

Findings indicate that when teaching materials are properly prepared and presented to students in a manner that they can readily understand, outcomes often indicate higher than anticipated gain in knowledge.

MILLER, RALPH E. JR. A Learning Experience in the Use of Selected Evaluative Techniques to Analyze the Occupational Abilities of the Mentally, Emotionally, and Physically Handicapped at the Community Workshops of Rhode Island, Inc. Supervised Field Practicum, M.S., 1970, University of Rhode Island. 59 p. Department of Education, University of Rhode Island, Kingston.

Purpose--This practicum was planned to give the author the opportunity to achieve a new learning experience in the administration and analysis of selected evaluation techniques used to determine the occupational competencies of the handicapped.

Method--To achieve the objectives of this practicum, the author used the following procedures:

1. The social worker supervisor and the psychological examiner of the agency were interviewed by the author to determine their functions relative to the admission of the client to the agency.

2. By attending several intake and evaluation conferences, the author gained new insights into the evaluation techniques used by the professional staff of the agency.

3. The author administered and evaluated a series of aptitude tests to several clients.

4. Several new aptitude tests were developed by the author to be used by the agency.

5. Interviews were conducted by the author, with several employers of former clients to determine the effectiveness of the evaluation experiences of the client.

Findings--This practicum experience not only resulted in the author gaining experience in the testing and evaluation techniques of the agency, but the additional experience of working with the handicapped provided an unusual lesson in human relations. The author learned about handicapped. He had the experience of administering tests and developing new testing techniques for use with the handicapped. By attending and participating in several evaluation conferences, the author gained an understanding of the techniques used to determine the validity of the evaluation process in guiding the client to a successful occupational experience.

The author recommends: (1) a full time vocational counselor be acquired by the agency to assist the client during the transition period from evaluation to full employment, (2) the work of the agency be expanded and a public relations program developed to establish greater rapport with the business community.

MOSHER, HARRY L. The Duties, Attitudes and Career Prospects of Forest Technicians in the 13 Northeastern States of the U. S. Thesis, D.Ed., 1970, The Pennsylvania State University. 210 p. Library, The Pennsylvania State University, University Park.

Purpose--To investigate the duties and career prospects of forest technicians in the 13 Northeastern States of the U. S. in order to offer suggested job descriptions and a possible forest technician career ladder.

Method--Date for the study were collected by mailed questionnaire and personal communication with federal, state and private employees and employers. Part I was designed to identify the duties and responsibilities of employees, and was analyzed using factor analysis techniques. Parts II and III examined employee attitudes toward their fellow workers and their organization, as well as job mobility. Analysis of variance techniques were used.

Findings--Factor analysis identified 4 factors among the 103 items dealing with an employee's duties and responsibilities. These factors were Data Collection and Manipulation, Technical Field Work, Training Responsibility--Fire Leadership, and Independence - Actions and Decisions. Only the last factor, Independence - Actions and Decisions, showed significant differences when responses were classified by employee grade level: forestry aid, forest technician, professional forester. No significant differences were found by the type of organization (federal, state, private) in which the respondent was employed.

The analysis of attitude statements generally indicated that there were no significant differences in employee responses by type of organization. This enabled the investigator to prepare common job descriptions which should be applicable to either federal, state or private organizations. Forest technicians consistently indicated that they felt a lack of opportunity and recognition for their efforts.

To provide recognition for the technician's part in the management process, standards for four levels of forest technician positions were developed. Each of the four grade levels I, II, III, IV was described in terms of the following elements:

Basic Function
Minimum Qualifications
Special Knowledges and Abilities
Relations to Other Employees
Degree of Independence
Special Recognition of Performance
Promotional Opportunities
Examples

Emphasis was placed on clarifying the relationship between the functions of professional foresters and forest technicians in each of ten areas:

Fire Control
Insect and Disease Control
Special Land Use
Engineering Improvements
Information and Education
Timber Management
Recreation
Water Resource
Wildlife
Land Use

OGLINE, PHILLIP H. Guidelines for Interpretation of Legal Aspects of Supervised Occupational Experience Programs in Agribusiness. Paper, M. Ed., 1970, The Pennsylvania State University. 40p. Department of Agricultural Education, The Pennsylvania State University, University Park.

Purpose--To develop comprehensive guidelines for conducting a successful occupational experience (cooperative education) program and to make a simplified interpretation of the legal considerations involved in the placement and supervision of high school students under 18 years of age in wage earning part-time employment in agricultural businesses, industries and services.

Method--The review of literature included collecting and examining existing sets of guidelines for cooperative education in agribusiness and distribution. Officials of the Pennsylvania Department of Labor and Industry were consulted. Adaptations of pertinent essentials of federal and state regulations were assembled into a set of guidelines for local directors of occupational experience programs to use in instructing students and managers of agribusiness establishments as agreements are made for placement of boys and girls in training stations.

Findings--The quick reference summary of legal requirements starts with instructions on obtaining a Social Security number and making application for an employment certificate. Students are not eligible for unemployment insurance.

An important reason for meeting minimum age requirements is to qualify for Workmen's Compensation. Both the student and the employer need this essential coverage. The federal Fair Labor Standards Act and the Pennsylvania Child Labor Law state specific limitations for various hazardous occupations.

Minimum wage provisions are listed. Care must be taken to follow the principle that the strictest requirement or highest standard, whether federal or state, governs individual cases.

Exemptions that apply to agricultural production occupations are specified. Special provisions for Student Learners have direct application to cooperative education programs. Education for safety, as provided by vocational instructors, qualifies student learners, laboratory student aides, and apprentices for employment in certain hazardous occupations. They must be 16 years of age.

SARGEANT, DONALD G. An Experiment Evaluating Methods of Dissemination of Business Simulation Instructional Materials to Agriculture Teachers. Thesis, Ph.D., 1970, The Pennsylvania State University. 141 p. Library, The Pennsylvania State University, University Park.

Purpose--To evaluate the comparative effectiveness of alternative methods of disseminating agricultural business management instructional materials to teachers as measured by teacher and student achievement test and game net worth standard scores. To study the effect of certain school classification variables on student achievement.

Method--The dissemination treatment variables were distribution and printout analysis. Distribution referred to the method by which teachers received the instructional materials: (1) workshop and (2) individual. Printout analysis referred to the method by which the first computer printour was analyz-d: (1) printout analysis by teacher and (2) printout analysis by project director and teacher. Thirty-six teachers were randomly assigned to the experimental treatment groups. Eighteen teachers received the instructional materials in a workshop and the other eighteen teachers on an individual basis in the home school. Half of the teachers in each of the two distribution groups received the printout analysis by project director and teacher treatment, and half the printout analysis teacher treatment.

Multiple choice achievement tests and semantic differential attitude tests were administered to teachers and students before and after the teaching of the unit. An occupational interest test was administered to students before the teaching of the unit and to teachers and students upon completion of the unit. The game net worth test score was obtained by having the teachers and students, after completing the unit, rerun the base quarter in the game manual.

Findings--Teacher achievement and game net worth test scores were not significantly different between the workshop and the individual treatments and between the printout analysis by teacher and the printout analysis by project director and teacher treatments.

Achievement test scores of students whose teachers received the instructional materials on an individual basis in their home schools were significantly higher at the .01 level by analysis of convariance. There was no significant difference in student game net worth test scores between the workshop and the individual distribution treatments. Student achievement and game net worth test scores were not significantly different between the printout analysis by teacher and the printout analysis by project director and teacher treatments.

Teacher test scores on attitude toward the concepts of price and computer were significantly higher than the pretest scores. Student test scores on attitude toward the concept of price were significantly higher while the attitude test scores for the concepts of profit and teacher were significantly lower than the pretest scores. Student interest test scores were significantly higher in ornamental horticulture, agricultural business and conservation. The interest test scores in agricultural production were significantly lower than the pretest scores.

SHAEFFER, WILLIAM C. Effectiveness of Using Two by Two Colored Slides in Teaching Shop Safety to High School Agricultural Mechanics Students. Paper, M. Ed., 1970, The Pennsylvania State University. 40 p. Library, The Pennsylvania State University, University Park.

Purpose--To develop a slide series and script for teaching shop safety in high school agricultural mechanics classes, to determine the effectiveness of the slides in teaching shop safety to high school classes, and to determine the relationship of teacher scores with student scores on a shop safety test.

Method--Nineteen two by two colored slides included ten areas of shop safety. The areas were: (1) safe storage of fuels and other combustible materials; (2) safe storage of tools, lumber, metal, and other supplies; (3) proper dress for shop work; (4) proper eye protection and storage of those devices; (5) color coding of shop equipment; (6) proper machine markings; (7) shop layout; (8) student behavior and cleanliness; (9) inspection of shops and facilities; and (1) reporting of accidents. A script was developed to provide descriptive information as a supplement to the slides.

A 25 question multiple-choice shop safety test was constructed and used to measure the effectiveness of the slides by determining the gain in test scores following the showing of the slides as compared to the pre-test scores.

The slides were shown and the multiple-choice test was given to first year students of vocational agriculture in ten schools in Snyder, Union, Northumberland, Juaniata, and Mifflin counties. The agriculture teachers of these students were also tested. With the test results, it was possible to determine if there was any gain in test scores following the showing of the slides, and if there was any relationship between teacher and student scores. The t-test, correlated t-test and correlation were used to compare student mean scores, teacher mean scores, and to appraise the effectiveness of using slides in teaching shop safety.

Findings--Data were gathered from 148 students and ten teachers. From the analysis of the data, the following results were obtained: (1) colored slides with a script are effective for use in teaching shop safety. The teachers and students had a gain in test scores that was significant at the .01 level. (2) If student pre-test scores were high, knowledge gained as shown by the test scores was less than if the pre-test scores were low. (3) If a teacher scored high, his students also scored high.

SHAH, JAFAR ALI. Rationale and Guideline for Developing Agricultural Education Programs in Selected Developing Countries in Southeast Asia. Thesis, Ph.D., 1970, The Pennsylvania State University. 219 p. Library The Pennsylvania State University, University Park.

Purpose--(1) To review the history of education, including agricultural education, in the public schools of India and Pakistan in southeast Asia; (2) to determine the extent of the need for instruction in agriculture in the public schools of the selected developing countries; and (3) to suggest guidelines for establishing agricultural education in the public schools of India and Pakistan.

Method--The study was a library type of research, involving a critical review of the development of education in India and Pakistan. Primary sources of information were various official documents and reports of the commissions established from time to time by the governments of the two countries for improving the educational standards of their countries.

Findings--(1) Historically, agricultural education has not been given much support or recognition in either country. (2) The British government placed emphasis on higher education usually at the expense of lower educational levels. (3) A scientific and technological revolution in agriculture is needed for increased productivity. (4) The development of human resources is a prerequisite for the development of physical resources. (5) There is an acute shortage of competent agriculture teachers at the secondary school level in both India and Pakistan.

The agricultural universities in India and Pakistan are being developed on the land-grant college system with the help of the United States Agency for International Development program. There are 11 agricultural universities in India and Pakistan on the land-grant college system with the help of the United States Agency for International Development program. There are 11 agricultural universities in India and Pakistan on the technical assistance program.

The importance of agricultural education should be recognized by the governments of India and Pakistan. The governments of India and Pakistan should allocate more funds for agricultural education. The increased budget should be utilized in opening comprehensive schools, employing more trained teachers, increasing building facilities, and establishing school farms, workshops and school libraries.

A five-year curriculum, comprising 200 quarter credit-hours, was recommended for the training of teachers in agriculture. Strong administrative personnel in education for all levels, with foresight and ability to grow professionally, should be developed.

SHOLTIS, ANDREW LEE. Vocational Agriculture and Its Relationship to the Fayette County Area Vocational Technical School and Community. Problem, M.S. 1970, West Virginia University, 54p. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was to (1) identify the extent to which the community will support and help to provide opportunities for placement of students after they have received preparatory instruction at the Fayette County Area Vocational Technical School and the correlated need for a comprehensive facility in the vocational agriculture department; (2) to establish how each of the cooperating high schools can aid in the selection and scheduling of students for the area vocational technical school vocational agriculture program; (3) and to determine how the course of study may be planned to satisfactorily meet both the needs of students in jobs and students who will go on for advanced training.

Method--Data for this study were obtained by a questionnaire sent to sixty-one businesses within the community and a survey to guidance counselors who were involved in guidance as it is related to the Fayette County Area Vocational Technical School.

Findings--Many of the businesses, 61.1 percent, indicated they were willing to cooperate in providing training stations and paying wages to students when they felt it would contribute something of value. Seventy-two percent were willing to have a qualified person evaluate trainees.

None of the guidance counselors felt they had adequate information about opportunities for gainful employment in agriculture.

Under the present system of scheduling students who attended the Fayette County Area Vocational Technical School none could meet the minimum college entrance requirements. Plans are underway to alter this situation.

There is an opportunity to develop a student training system when interested and qualified students are available.

SPONAUGLE, ADAM JUNIOR. A Follow-up Study of Students of Vocational Agriculture at Hedgesville High School From 1925 to 1968. Thesis, M. S. 1969, West Virginia University, 78 p. Library, West Virginia University, Morgantown.

Purpose--It was the purpose of this study to determine the occupational status, rate of unemployment, number of non-graduates, the percentage farming full time and part time, the percentage employed in agricultural occupations and the percentage employed in non-agricultural occupations. The study also showed the relationship between the number of years of vocational agriculture completed and the occupational choices of the students.

Method--The data for this study were obtained from questionnaires sent to a random sample of former students of Hedgesville High School from 1925 to 1968.

Findings--The data revealed that 8.8 percent were farming full time, 14.7 percent were farming part time and 14.7 percent were engaged in agriculturally related occupations.

Twenty-eight percent of the former vocational agricultural students attended college, of which 16 percent attended an agricultural college.

Many favorable comments were made by the former students concerning their training in vocational agriculture and the FFA. Not all of the former students made a comment concerning vocational agriculture and FFA, but of the students making comments, not one expressed an unfavorable comment.

The summarized data is to the effect that of the former students who had completed four years of vocational agriculture, 62.5 percent are either farming full time, part time or are engaged in agriculturally related occupations.

STASULAT, JOE J. The Effects of Business Game Complexity and Computer Location on Student Learning, Occupational Interest and Attitude. Thesis, Ph. D., 1970, The Pennsylvania State University. 191 p. Library, The Pennsylvania State University, University Park.

Purpose--To evaluate effects of business game complexity and computer location on high school student learning, occupational interest, and attitude. The Purdue Farm Supply Business Management Game provided the basic simulation model used in the experiment. Three farm supply business games of varying complexities were developed. Each complexity level required the students to use economic and management knowledge and skills in managing a simulated farm supply business. The students dealt with the interaction and use of credit policies, pricing, advertising, inventory control, truck and storage expenditures, loans, cash flow, variable and fixed costs, and the influence of competition.

Method--Instruction manuals for each complexity level of the farm supply business management game and an Agricultural Supplies Management Handbook were developed for use in the study. Workshops and individual visits were used to distribute the materials to the teachers in 39 schools. Whether on a group or individual basis, all teachers received three hours of instruction. Teachers assigned students to teams of two. Each team managed the farm supply business for the four quarters of 1970. Teachers spent 12 to 15 hours of instructional time on the unit.

The criterion measures were: (1) a management achievement test in two parts: knowledge of management principles, and application of management principles; (2) the Hamilton and Hill Agricultural Occupational

Interest Scale; and (3) a semantic differential to measure student attitude toward ten agribusiness concepts. The major statistical procedure was analysis of covariance.

Findings--Complexity level 1, representing the simplest game, was used by 180 students; complexity level 2 was used by 178 students; and complexity level 3, the most complex game, was used by 187 students. At the conclusion of the experiment, no significant differences were found in student achievement, occupational interest, and attitude when taught by three levels of business game complexity.

The simulation data for 407 students were processed at The Pennsylvania State University and the data for 138 students were processed on computers in the local school or community. No significant differences were found in student achievement and occupational interest with regard to computer locations. Significant differences were found in student attitude toward four of the ten concepts. Students assigned to local processing had higher attitude scores toward the concepts profit, textbook, and arithmetic. Students assigned to The Pennsylvania State University processing a higher attitude score toward the concept game.

Findings of the study indicate that when used as a teaching tool, the complexity of the business game used, and the location of the computer facilities which process the simulation data result in no differences in student learning and occupational interest.

STEVENS, GLENN Z. and NORMAN K. HOOVER. Vocational-Technical Education in Agricultural Resources. Staff Study, 1969. 41 p. Final Report, Project 19050, Research Coordinating Unit, Pennsylvania Department of Education, Harrisburg.

Purpose--To determine vocational-technical education needs of persons engaged in or preparing for employment in occupations dealing with Agricultural Resources , to plan instructional programs, and to conduct inservice teacher education services for instructors of adult and high school classes.

Methods--A survey schedule listing items of program establishment and instructional units was used in personal interviews with five groups of professional and business leaders. Factor analysis yielded significant groupings of items and significant differences in ratings.

A 100-item multiple choice achievement test was constructed and administered to 172 students in eight high schools to appraise present levels of knowledge in the soil, water, air, forest, and wildlife areas of environmental control, as well as mechanics and business skills needed. Item analysis techniques were used. Results were used in consultations with teachers in 40 schools as they were aided in teaching units prepared in the project.

Findings--The priorities of items of program establishment and instructional units can be determined from the importance ratings given the items by persons closely associated with the occupational area as well as by persons closely associated with the occupational area as well as by persons in education. The guide published from this study can be of value in establishing programs of instruction for students planning to enter and advance in occupations in conservation, protection and regulation, and recreational utilization of agricultural resources.

The second phase of the project focused on the preparation of a teacher's resource unit for an introductory course for high school students. The outline of units was built upon the factor analysis of items of instruction. The groupings were (1) business management, (2) soil, water, and air, (3) related mechanics, (4) occupational information, (5) related animal science, and (6) related plant science. Student learning activities were developed for selected key segments of knowledge and skill in entry jobs available to young workers in occupations in natural resources.

A supporting service during the third year of the project was publication of a revised edition of the SCS Technical Guide, a student handbook valuable in planning the management of specific soil types as mapped on land owned or leased for agricultural, industrial, or public uses.

STULL, PAUL SYLVESTER. Job Entry Competencies Needed in The Field of Farm Machinery. Thesis, M.S., 1969, West Virginia University. 100 p. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was to determine the competencies needed by vocational agriculture students in agricultural mechanics to become gainfully employed in some phase of the agricultural mechanics field.

Method--Data for this study were collected through questionnaires mailed to forty-one members of Mar-Del-Va Farm and Power Equipment Association.

Findings--Farm equipment dealers want employees with previous experience and training in farm mechanics. Dealers are willing to cooperate with the high schools in furnishing work stations for training.

Programs for post-high school students in technical training areas are needed.

Instructional program should be based on competencies needed in the field of farm machinery.

Farm equipment industry offers unlimited opportunities for anyone with interest and initiative to learn and work.

Some equipment dealers expressed a need for business management techniques.

TRAVIS, RALPH G. Contribution of Occupational Experience in High School Agriculture Programs to Subsequent Employment. Paper, M. Ed., 1970, The Pennsylvania State University, 66 p. Library, The Pennsylvania State University, University Park.

Purpose--To determine if high school graduates had worked in an occupation similar to that for which trained in an occupational experience program in agriculture, to determine if the program helped in acquiring a job for which trained, to determine how graduates rated various aspects of their training, and to determine why they entered occupations other than those for which they had been trained.

Method--A survey form was developed to collect data on past education, job held, and basic demographic information. Parts of the form attempted to assess attitudes toward past training in occupational experience programs in agriculture and quality of advice received from high school staff members. The questionnaire sought information pertinent to the program influence in making an occupational decision and a rating of various aspects of the training.

A list of 31 schools that had in operation a released school time agricultural occupations experience program was obtained from a recent unpublished survey in Pennsylvania. Fifteen schools provided names of two to 41 former students who had completed such a program. Questionnaires were mailed to 158 individuals.

Findings--Seventy-two persons, or 48 percent of the sample, returned their questionnaires. Of these graduates, 34 had been trainees in agricultural business, 35 in agricultural mechanics and three in a combination of the two training areas. A total of 42 of the 72 persons either were now working in or had worked in an occupation for which trained (18 in agricultural business and 24 in agricultural mechanics). Of the 42 who had training related to employment, 10 were in part-time jobs. At the time of survey administration 24 were holding training related jobs.

The average length of training was 10.3 weeks with an average of 19.8 hours per week of on-the-job training and 2.5 hours of in-school classroom work related to their training jobs. Those who later held training related jobs averaged more on-the-job training (262 hours) than those who never worked in training related areas (129 hours).

The major reasons given by the 48 graduates for not being employed in a training related area at the time of the survey were that they advanced to a better job (33 percent), disliked the job (17 percent), never planned to work in the area (16 percent), and military service (10 percent).

On a 0 to 4 Likert-type scale, graduates rated their on-the-job experiences 2.91, instructional experiences provided in the classroom work 2.39, and school guidance activities 1.54. All indicated that they would be willing to recommend an occupational experience program in agriculture to others.

WINTERS, PHILLIP BURTON. A Program of Vocational Agriculture For Adult Farmers of the Wirt County High School Area. Problem, M.S., 1969, West Virginia University, 69 p. Library, West Virginia University, Morgantown.

Purpose--The purpose of this study was to determine the current needs for a continued program of vocational agriculture for adults and to obtain information to use as a guide in formulating such programs.

Method--Data for this study were obtained through surveys administered to twenty-four farmers between the ages of twenty-one and sixty-three. Information was gained regarding the (1) farmers, their status and their education; (2) the facilities on the farms; (3) and some of the practices followed in carrying out the work of the farm. Other data were collected from the United States census reports.

Findings--The survey revealed need for a program of systematic instruction which would improve the agriculture of the area by evaluating present practices and developing best know practices to date.

Two specific needs were found from the survey: one was needed improvement in dairy record keeping and the other was pasture improvement programs that would allow for additional animal units per acre that could improve farm income.

General and specific objectives were set up and a course of instruction was outlined for four years, with major emphasis on dairying, beef cattle, sheep, farm mechanics and community living.

YOKUM, TROY MICHAEL. Competencies Needed for Employment in Agriculture Sales and Service. Problem, M.S. 1970, West Virginia University 129 p. Library, West Virginia University, Morgantown.

Purpose--It was the purpose of this study to determine the competencies needed by graduates to become gainfully employed in agriculture sales and service and to determine the job opportunities that are available for students and graduates.

Method--Data for this study were collected through questionnaires mailed to fifty-six Southern States Cooperative store managers in regions 3, 5, 6, and 7. The data were processed through the facilities of the West Virginia University Computer Center.

Findings--Competencies needing comprehensive training were feed additives and their value, advising farmers on livestock selection, management, feeding and sanitation, animal diseases, calculating feed rations, feed quality, animal feed requirements, crop nutrients and using chemicals.

The managers recommended general training in the following: internal parasites; external pest control; feed and water space requirements for various animals; fertilizer analysis and materials; weed and brush control; identifying seeds and plants; care and maintenance of lawn grasses; promoting public relations; recognizing potentially good customers; displaying a pleasant, courteous personality; using time effectively with numbers; judicious sales adjustment; use of farm weights and scales accurately; household appliances; paints; governmental farm programs; and petroleum products.

The study states the number of hours of instruction the store managers felt was necessary for sales personnel to be competent in these areas.

Job opportunities are available in agricultural sales and service for thos who are interested and willing to work.

The managers indicated they wanted employees with initiative, ambition, and a business mind.

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